

with the similarity of recent limpet shells which are secreted by widely different animals, it is almost inconceivable that the Silurian form should have any closely allied recent representative. The rhythmical manner in which the adductor scars of *Tryblidium* are arranged in pairs clearly indicates a peculiar disposition of the organs, which might indeed have paralleled in some particulars the organization of some of the Chitons of that ancient time.

For the rest, many of the ancient limpets are represented by shells which might well have belonged to *Lepeta* or *Acmaea*, yet of the relations of which, as in the case of many recent limpets, we are not permitted to arrive at any dogmatic opinion for want of the requisite data, a deficiency which, in the case of the fossils, must remain for ever unsupplied.—*Proc. Acad. Nat. Sci. Philad.* 1893, p. 285.

On the Occurrence of Arion lusitanicus, Mab., in the British Isles, and Descriptions of Four new Varieties. By WALTER E. COLLINGE, Mason College, Birmingham.

Through the kindness of Mr. H. Burnley Rathborne, of Dublin, I have recently received some specimens of this interesting species of *Arion*, collected at Bevihenen, Bantry Bay, Ireland.

Dr. Scharff, in his work upon the Irish slugs *, mentions a variety of *A. empiricorum*, Fér., in which the retractor muscles "are attached quite close to the receptaculum and the upper portion of the oviduct;" this, I have previously stated †, I consider to be *A. lusitanicus*, Mab. Some months ago I examined specimens from Ireland and compared them with continental examples, and felt sure that I was correct in assigning the former to this species. I hope shortly to obtain further supplies of material, and will then describe in more detail the anatomy. References to the anatomy &c. are given by Pollonera ‡, Simroth §, and myself ||.

Whilst recording this interesting addition to the fauna of the British Isles I take the opportunity of describing four new colour variations.

Rufescens, var. nov.

Whole of body a dark red. Sides of body bandless. Sent with type by Mr. Rathborne.

Nigrescens, var. nov.

Described from a black specimen sent with type by Mr. Rathborne. I would, however, suggest that the name should include all

* *Trans. Roy. Dublin Soc.* 1891, ser. 2, vol. iv. p. 539.

† 'The Conchologist,' 1893, vol. ii. p. 7.

‡ *Atti Acc. Sci. di Torino*, 1889, pp. 405, 406, pl. ix. figs. 1-6; also *Boll. d. Mus. Zool. ed Anat. comp. Torino*, 1890, vol. v. no. 87.

§ *Die Nachtschnecken d. Port. Fauna*, 1891.

|| 'The Conchologist,' 1892, vol. ii. p. 116.

black- or plumbeous-coloured forms, examples of which I have seen from Mentone.

Olivaceus, var. nov.

Various shades of olive-green. Figured by Pollonera (*op. cit.*). I have examined specimens from Mentone.

Flavo-griseus, var. nov.

Yellowish grey. Foot-fringe usually lighter than the body. From Mentone.

It is difficult to separate some forms of *olivaceus* from this variety.

On the Mechanism of the Production of Light in Orya barbarica of Algeria. By M. RAPHAEL DUBOIS.

The discovery of the photogenous faculty in the Algerian *Orya barbarica* is of relatively recent date. This fine Geophilid was observed for the first time, in a luminous condition, almost at the same moment by M. Raphael Blanchard at El Fantara (April 1888) and by M. J. Gazagnaire at Nemours (May 1888).

Moreover, a certain number of important peculiarities were mentioned by M. Gazagnaire*; the phosphorescent substance is exuded from pores situated upon the sternal and episternal plates in the form of a viscid yellowish fluid, with an odour *sui generis*, drying rapidly on exposure to the air and insoluble in alcohol.

In September 1887, on observing some specimens of *Scolioplanes crassipes* which had been sent to me from La Fère (Aisne) by M. Huet, I had myself remarked that the luminous fluid was excreted from the ventral surface of the body, contrary to an opinion which I had previously advanced; but I had not published this observation, since I intended to complete it later on. As I was unable to obtain fresh examples of *Scolioplanes*, I went to Algeria to look for specimens of *Orya barbarica*.

Not only have I verified the accuracy of the facts recorded by M. Gazagnaire, but I have been able especially, thanks to the employment of the microscope, of which this investigator did not avail himself, to make new observations which confirm in the most precise manner the correctness of the definitive theory of the mechanism of the production of light, as set forth in my last work on *Pholas dactylus* †.

The facts which I have already recorded in various communications are correct, but their interpretation has sometimes varied in consequence of new discoveries; to-day, however, uncertainty can no longer exist, owing to the facility for observation and experiment.

* J. Gazagnaire, "La phosphorescence chez les Myriopodes" (Bulletin de la Société Zoologique de France, t. xiii. p. 182).

† R. Dubois, 'Anatomie et Physiologie comparées de la *Pholade dactyle*.' Paris, G. Masson, 1892.